

COLLECTIVE DWELLINGS

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Summary

This paper presents evidence that the sustainable dwelling involves the collective use of spaces and services at home. By exploring the possibility of sharing spaces and services and establishing a common use, we will save space and energy, increase the economic efficiency of dwellings, and gain new forms of socialization between users.

In order to find these new forms of socialization that satisfy both users and environmental demands, we need to question the separation between private and common use. In this process we must guarantee individual privacy and comfort and probably divide users according to similar interests and profiles. With this model each person contributes his or her lifestyle to a sustainable society. Instead of having a society in which each home uses all the necessary services and spaces individually, acting as an isolated bubble and resulting in an inefficient consumption of resources, we should have a society in which homes and buildings are designed as a system of individual and shared spaces and services with intelligent resource consumption. This new sustainable society is only possible through new design proposals for the dwellings people live in. This is clearly the responsibility of architects.

In the history of architecture several types of collective dwellings offer important and useful examples for the design of future proposals. These models have mostly responded to social needs and political visions, whereas today's society demands an environmental purpose.

Keywords: collective dwellings, shared spaces, network living

1 Changes in dwellings

Although dwellings are a conservative reflection of society because they are normally not open to changes, our ways of living do adapt. The dwelling goes side by side with social transformations, reflecting in its organization the users' social realities. Homes therefore respond to social demands.

The evolution of habits is not reflected so much in the type of activities carried out at home, which remain almost the same. The major difference in today's homes is the change of the type of relations inside dwellings, which is reflected in how these activities take place. Generalizing, we can say that activities that were once collective have now become individual. In the last few years there has been a reduction in the occupation of dwellings and an increase in single people's homes, resulting in the demand for greater privacy. New

lifestyles also have real effects at home. Internet has allowed people to work from home and people claim that this results in better comfort. There is a major ecological awareness, which starts at home, and a decreasing dedication to domestic tasks. [1]

1.1 Population changes and their repercussions

It is not only the activities taking place at home that have changed. The users have also changed, so the offer of dwellings must adapt to this new reality. Analyzing the evolution of Spain's population, we found a falling number of inhabitants per home, from 3.2 in 1991 to 2.9 in 2001 [2]. In the same time period Spain has doubled the number of single-person households (**Fig. 1**).

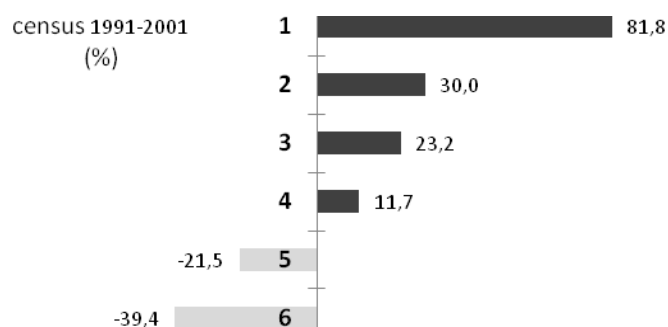


Fig. 1 Variation in the census of the number of inhabitants per home between 1991 and 2001.
Source: INE.

This change affects two social groups: young people between the ages of 25-34 and elderly people aged over 65 (**Fig. 2**). These two groups suffer from a lack of available dwellings on the property market. Young people cannot afford an apartment and the elderly have special needs that cannot be satisfied in normal dwellings. In these two cases the solutions are residences for students and the elderly, or the social housing offered by the authorities. Residences are associated with a lifestyle that many people do not identify with. With low pay in their first years of work, young people cannot afford a flat by themselves, so they normally decide to rent a room or share an apartment with other people. With the increase in life expectancy, after retirement older people need to live in a community but are still too independent to live in nursing homes.

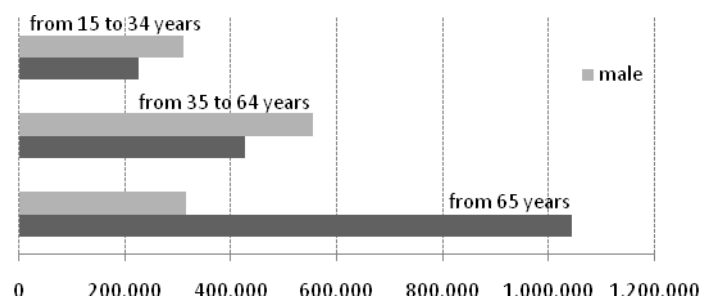


Fig. 2 Single-person homes by age groups and gender in the 2001 census. Source: INE.

The decrease in the average family size and the increase in building and land prices have resulted in the saturation of cities and the reduction in the floor area of flats. The smaller

flats offered by the market are not efficient. They have higher energy consumption than large ones, in both construction and use [3]. The inefficiency of a flat does not increase in direct proportion to its size. A smaller flat requires a proportionally larger area to supply the same services, but also consumes more energy for heating. However, the most important fact is that energy consumption per person is higher in small flats than in large ones. The solution for this lies in the design of dwellings. The performance of small dwellings improves when some spaces and services are common with other homes.

1.2 Bubble homes



Fig. 3 Nagakin Capsule Tower. Nishio Kurokawa. Tokyo, Japan, 1971-73.



Fig. 4 Basic Home, experimental prototype in metallized polyester. Martin Ruiz Azua, 1999

The increase in the number of small flats and the lifestyle related to them creates a new kind of home. We associate individuals with a range of activities that they perform inside their houses. At home they sleep, eat, share, work, read, and so on. Every activity is related to one space in the dwellings (although some activities can be carrying out in the same space, and some activities have no specific space). We can determine that the habitat-space of a user is the sum of the space needed to perform the activities that take place inside the dwelling. Based on this model, homes are like activity containers (**Fig. 3 and 4**). This means that each user has his or her own “bubble dwelling”, where he or she is one of the pieces that fills it. The “bubble home” is delimited and contains the possibility of performing all the activities necessary for the user’s life. It is self-sufficient, because the users need (almost) nothing from the exterior habitat.

Today’s society is formed by “bubble homes” organized into buildings, neighborhoods, and cities. Each of these homes has its own spaces, services and characteristics, but the main attribute is the lack of communication and sharing between different dwellings. These homes are therefore “bubble dwellings”: isolated homes with no kind of network system.

2 The collective house

2.1 Benefits

It is essential to design dwellings that are adapted to the populations' needs, so there is an urgent need to explore the possibility of sharing services of homes by collectivizing them. In our cities we find collective residences that are mostly for young and elderly people. These residences are like the addition of bubble homes, because they do not have a network system. The best way to join the three traditional units of coexistence—individual, family and society—is to create network buildings.

It is important to understand the main target population for a collective living system. In Spain, for example, young and active people now choose to live in shared flats. Working people until the age of 40, sometimes with low range salaries, rent a room in a shared flat with people with whom they have no family ties. In some flats people already live in a common system, but these flats are designed for families and are not suited to the coexistence of people who have no family ties and sometimes even have different backgrounds, lifestyles and aims.

Collective houses, working as a network system, have social benefits and save space, energy and money.

- **Economic benefits**

Space and services are two important factors that increase the price of housing. Some spaces and services that are traditionally considered to be for private use can be separated from the individual dwellings, thus leading to a decrease in their cost. Furthermore, collective houses give users access to more services, such as a gym or a garden, for the same price as a home without them.

- **Users' benefits**

A collective home promotes socialization between users, thus bringing about social and cultural changes. To achieve a community there are two essential conditions. First, living in a collective house must be a choice of the users, or they will consider it as an imposition; second, users must participate in the decisions from the outset, because it is the only way to get them involved.

- **Architectural benefits**

Centralizing and collectivizing services makes it possible to reduce the floor area of dwellings and thus offer homes to social groups who are currently excluded from the housing market. These groups have new ways of living, new family structures, and therefore new user profiles. They are more receptive to changes and improvements in their home, if it means that they can obtain one. Architects must create new typological possibilities by designing dwellings adapted to the population's needs.

It is important to start thinking about the requirements of dwellings. Houses must respond to demands for space, comfort and services, but this does not mean that they have to be privatized. Collective houses meet the same or more requirements but move a hierarchal system of spaces and services from private to public use.

- **Floor areas**

As stated above, family units have decreased in size, but users' needs have also changed. Floor space means quality. Living alone does not mean that users do not have spatial needs. Collectivization in houses gives them access to facilities that would not be available in a 30-square-metre home. This means that the floor area of homes would be the sum of the private spaces and all the shared service areas.

- **Energy benefits**

The collectivization of some services allows energy systems to be centralized. This has immediate and long-term economic advantages. It allows more efficient systems, better control and maintenance, and a high capacity of adaptation to changes and innovations. Another benefit is the role of the user as an energy controller, so inhabitants are in charge of energy saving.

2.2 Characteristics

After understanding the benefits and target populations of collective houses, we analyzed several examples from the history of architecture. The main purpose was to gather their most important aspects, in the knowledge that they were designed for different purposes. Collective housing as a network system is a different concept resulting from a new demand, but some ideas can be gathered from collective houses designed for protection, for social reasons and even for political reasons.



Fig. 5 *Tulou*. Most are located in the regions of Fujian, Jiangxi and Guangdong, in China.



Fig. 6 Harold Way Apartments. Koning Eizenburg Architecture. Hollywood, California, USA.

Protection has always been an aim of collective dwellings, and good examples are the *tulou* towers in China. (**Fig. 5**) These round towers permit the equalitarian distribution of all inhabitants (all the individual cells are equal), and at the same time create a fortress protecting them from exterior attacks [4]. Other buildings do the same but to protect life from the extreme environmental conditions or simply to create a space protected from the city's streets, as in the Sea Ranch Condominium (MLTW, California, 1964-65) and the Harold Way Apartments (**Fig. 6**).

A general characteristic of collective dwellings is that they have common services. We can separate two types. One is the minimum individual cell, in which the living area is reduced to one or two spaces, and outside the cell there are several common services, such as the toilets and bathrooms, a common kitchen or simply an oven, the laundry and the socialization areas. This means that the common spaces are essential to the daily routine and hygiene. Such buildings were made specially for social or political reasons. The courtyard houses in Sevilla, *corrales*, are buildings with a single entrance composed of a courtyard surrounded by single or double-space dwellings that open (exclusively) onto

it [5]. With all services in common use (one kitchen, one toilet and one washing place), community life was unavoidable (**Fig. 7 and 8**).



Fig. 7 Coliseo courtyard building dating from the 16th century. Seville, Spain.



Fig. 8 Escoberos courtyard building floor plan. In grey are the individual dwellings; in yellow the common kitchen, laundry and toilet.

The second kind of common services are those that are extra to the living spaces. The private dwelling is self-sufficient but the building provides extra spaces like a gym or a nursery. The best example of this system is the Unité d'Habitation in Marseilles by Le Corbusier [6].

Collective dwellings are associated with a community lifestyle. Rather than an architectural type, cohousing is a social model established for a specific lifestyle. Originating in Denmark, cohousing is described as neighborhoods that combine the autonomy of private dwellings with the advantages of shared resources and community living. Residents usually own their individual homes, which are clustered around a common building.

Another way to increase the relations between users is by reducing the limits between private and common spaces. As can be seen in the Nemausus building's balconies [6], the private cell extends to the outside, removing the limits between private and public. In these cases the solution is to make a gradual distinction of spaces from exclusively private to mixed use and public areas.

The last characteristic of the collective dwelling is the capacity to bring together people from different profiles. It is important for collective buildings to allow the presence of different kinds of family structures, from single people to families with children. This characteristic allows a better integration of collective dwellings in the city.

3 Are people ready to share?

After investigating how our society changes, and understanding the benefits of collective way of living, it is important to know whether people are willing to share.

3.1 Survey

To understand the motivations and frustrations related to sharing, we carried out an internet survey among 140 persons aged 20 to 40 years old, most of them from Spain and Portugal. More than 60% of the respondents had at some time of their lives shared a flat with someone other than their relatives or partner. They stated that economic reasons were the main reason for this choice, but lifestyle was also an important factor. The best way to

achieve emancipation is to share a flat with friends or colleagues. Associated with the economic factor, there is always a factor of time. Collective dwellings are normally a transition situation for young people, between their parents' home and their own family home. Nevertheless, 78% of respondents had shared homes more than twice, and for 5 to 6 years.

This survey also questioned people about their awareness of the social, economic and environmental impact of sharing an apartment. The answers were very interesting: 94% thought that sharing a home is the best solution for economic reasons (not surprisingly, because that was the main reason why they shared an apartment), but 55% and 62% of the respondents thought that sharing an apartment can provide benefits from a social and environmental point of view, respectively.

The second part of the survey compared spaces and services shared by users in three different situations. The first considered the services and spaces shared by users when they shared homes with people other than their relatives or partners. The second considered the spaces and services in their present home that they share with the other apartments of the building. The last considered their willingness to share as a personal choice.

3.1.1 Spaces

When comparing the three answers we realized that desire and reality are not always the same. The living and dining rooms, the kitchen and the bathroom were spaces that users shared. Users were willing to share spaces that they did not have, such as a swimming pool, a garden, a gym or a parking space. The balcony, the hall, the storage space and the laundry area were spaces that had once been shared and there was some willingness to continue sharing them. The conclusion about sharing spaces was that, depending on their stage in life, people are willing to share some spaces or others, but they are always willing to share spaces that they do not have. The meaning of this is that when the result is the improvement of life quality there is more willingness to share (**Fig. 9**).

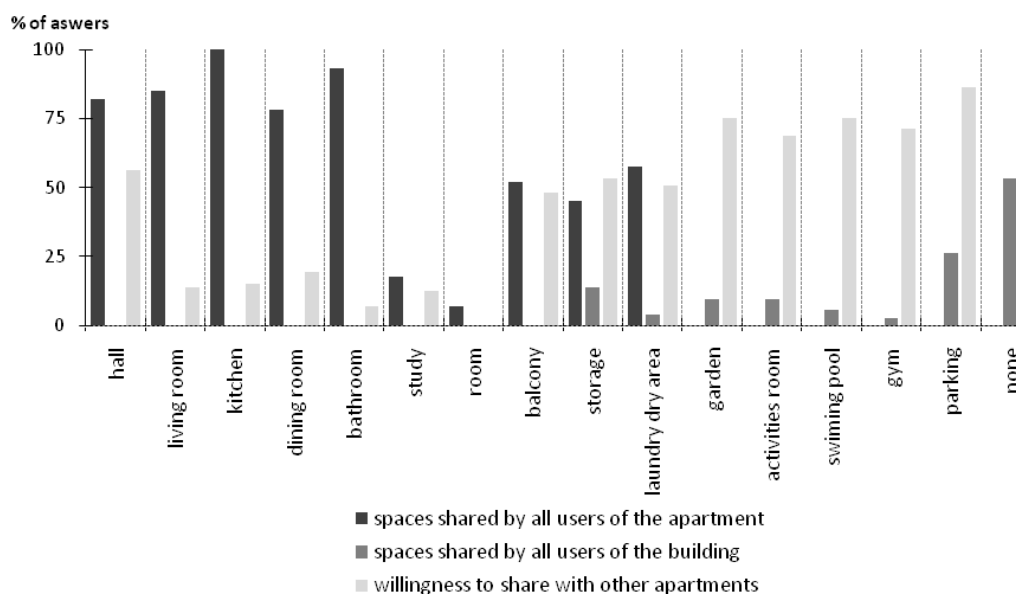


Fig. 9 Survey results: shared spaces.

3.1.2 Services

The situation was different for shared services. Most of them were shared when users shared homes. The willingness to share them in the future was not very high (mostly under 40%), but was always higher than for the services shared in their present homes. Users are always willing to share services, probably because services are easier to divide (**Fig. 10**).

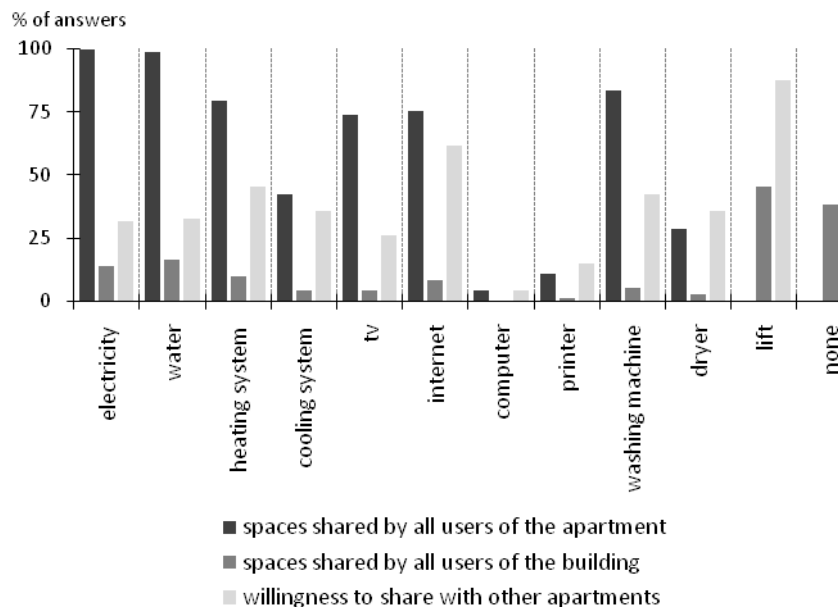


Fig. 10 Survey results: shared services.

4 Conclusions

Collective dwellings place architecture in the role of finding solutions for users, but also for cities and for the environment. At present there are people living collectively but occupying houses that were designed for another purpose. To meet the demands of these users, it is urgent to design new collective dwelling typologies adapted to today's lifestyle and allowing the cohabitation of people with different profiles and interests.

Our cities are composed of collective dwellings in which sharing is reduced to a minimum expression. Users are willing to blur the line between private and common spaces by collectivizing some parts of their homes. Collective dwelling must be a living system rather than just a spatial concept. The network system will start in the architectural design and will be supported by new technologies. Information systems can contribute to the management and organization of collective homes, for example by centralizing the environmental control with the user as a controller.

To make collective dwellings a reality, we must create a model, a program that represents this living system, so that architects and promoters can follow it.

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